

**METHOD AND SYSTEM FOR MANAGING HARDWARE RESOURCES
TO IMPLEMENT SYSTEM ACQUISITION USING AN ADAPTIVE
COMPUTING ARCHITECTURE**

ABSTRACT OF THE DISCLOSURE

5 The present invention concerns a new category of integrated circuitry and a
new methodology for adaptive or reconfigurable computing. The exemplary IC embodiment
includes a plurality of heterogeneous computational elements coupled to an interconnection
network. The plurality of heterogeneous computational elements include corresponding
10 computational elements having fixed and differing architectures, such as fixed architectures
for different functions such as memory, addition, multiplication, complex multiplication,
subtraction, configuration, reconfiguration, control, input, output, and field programmability.
In response to configuration information, the interconnection network is operative in real-
time to configure and reconfigure the plurality of heterogeneous computational elements for a
15 plurality of different functional modes, including linear algorithmic operations, non-linear
algorithmic operations, finite state machine operations, memory operations, and bit-level
manipulations. The various fixed architectures are selected to comparatively minimize power
consumption and increase performance of the adaptive computing integrated circuit,
particularly suitable for mobile, hand-held or other battery-powered computing applications.
In an exemplary embodiment, some or all of the computational elements are alternately
20 configured to implement two or more functions including a system acquisition function.

SF 1289415 v1